INTERVIEW QUESTION-ANSWERS OF MOBILE APP DEVELOPMENT

1. What are the main differences between Native, Web, and Hybrid apps?

- **Native Apps**: Developed for a specific platform using platform-specific languages (e.g., Swift for iOS, Kotlin for Android). They offer the best performance and access to device features.
- **Web Apps**: Mobile-friendly websites that run in browsers. They rely on web technologies like HTML, CSS, and JavaScript.
- **Hybrid Apps**: Built using web technologies but run inside a native container, offering partial access to device features. Frameworks like Ionic and Apache Cordova are used.

2. What are the advantages of using a cross-platform framework like Flutter or React Native?

- Faster development due to a single codebase for both iOS and Android.
- Cost-effective since fewer resources are needed to maintain separate codebases.
- Easier updates and feature parity across platforms.

3. What is the significance of an API in mobile app development?

- APIs (Application Programming Interfaces) enable communication between the app and external systems or services. For example:
  - Fetching data from a server.
  - Integrating third-party services like payment gateways or social media.

4. What are the components of an iOS application?

- **UIViewController**: Manages a single view or screen.
- **Storyboard/XIB**: Visual representation of the app's UI.
- **Model-View-Controller (MVC)**: A design pattern dividing the app's logic.
- **Core Data**: Framework for managing persistent data storage.

5. What is the difference between Stateful and Stateless Widgets in Flutter?

- **Stateless Widgets**: Do not store any state. Used for static screens (e.g., text or images).
- **Stateful Widgets**: Store state that changes over time, such as a button click or user input.

6. How do you test mobile applications?

- **Unit Testing**: Test individual components or functions.
- **UI Testing**: Verify the app's visual elements and user interaction.

- **Integration Testing**: Ensure different components work together.
- Tools like **JUnit**, **Espresso** (Android), and **XCTest** (iOS) are commonly used.

7. What is the purpose of Gradle in Android development?

Gradle is the build system for Android projects. It:

- Automates tasks like compiling code, linking libraries, and packaging APKs.
- Manages dependencies for the project.

8. What are the design principles for mobile app development?

- **Simplicity**: Keep interfaces intuitive.
- **Responsiveness**: Ensure the app reacts promptly to user interactions.
- **Consistency**: Maintain uniform design and behavior.
- **Accessibility**: Make the app usable for people with disabilities.

9. How do you manage multiple screen sizes in mobile app development?

- Use **responsive layouts** (e.g., ConstraintLayout in Android, Auto Layout in iOS).
- Provide different resources (images, dimensions) for various screen densities.
- Test the app on multiple devices or use emulators.

10. What is the difference between a fragment and an activity in Android?

- **Activity**: Represents a single screen with a user interface.
- **Fragment**: Represents a portion of a UI inside an activity. It allows modularity and reusability.

11. What is the difference between a push notification and a local notification?

- **Push Notification**: Sent from a remote server to the device, even when the app is closed.
- **Local Notification**: Triggered by the app itself, based on specific conditions or user actions.

12. How do you improve an app's user experience (UX)?

- Use animations and transitions to enhance interactivity.
- Optimize app performance to avoid lags.
- Provide clear navigation and feedback for user actions.
- Conduct usability testing to identify and fix pain points.